

ABSTRACT

A percussion drill bit for drilling into a subterranean earth formation. The drill bit has a central longitudinal axis and is operable by applying repetitive axial percussive impacts on the drill bit in a direction having a component along the axis and by applying rotary motion about the axis relative to the earth formation. The drill bit is provided with one or more axial cutters for predominantly axially cutting the subterranean earth formation in response to the axial percussive impacts and one or more shear cutters for predominantly shear cutting the subterranean earth formation in response to the rotary motion. There is a first shear cutter of the one or more shear cutters, and one or more of the axial cutters are arranged with respect to the first shear cutter to engage with the subterranean earth formation earlier during a percussive impact than the first shear cutter.